PERSONAL：

Name: Lei Shi
Department: Department of Mathematics, College of Sciences
Gender: Female
Degree: Ph.D.
Title: Associate Professor
Major: Applied Mathematics
Graduated University: Nanjing Normal University
                   Bifurcation of Nonlinear PDE
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BRIEF INTRODUCTION:

My research is concentrated on Pattern dynamics of nonlinear partial differential equations and Biological Dynamics. The main research object is the fluid in the Rayleigh-Bernard system, nonlinear optical system, reaction diffusion-system and oscillation sandbox system etc. By using the bifurcation theory, the dynamic classification of the critical behavior of the system far from the thermodynamic equilibrium system is made. Whether it is in fluid mechanics system, or in the reaction diffusion system, nonlinear optical system, or biological and ecological systems, we mainly seize the dynamical general character of the system near the critical point: the spatio-temporal symmetry breaking when the system losing the stability and the formation and the selection and stability of the new space-time structure defined by the different symmetry breaking.

EDUCATION:

Ph.D., Applied Mathematics, Nanjing Normal University, 2013
M.S., Applied Mathematics, Nanjing University of Science and Technology, 2005
B.S., Mathematics, Yancheng Teachers University, 2003

PROJECTS UNDERTAKEN:

1.Bifurcation and Stability of a Nonlinear PDE , The Natural Science Foundation of Jiangsu Province(No. BK20150651)，2015/07-2018/07，Ongoing project，Principal Investigator
2.Global Hopf Bifurcation and High Codimension Bifurcation of Semilinear PDES, The Fundamental Research Funds for the Central Universities(No. KYZ201538)，2015/01-2017/12, Finished，Principal Investigator
3.Study of Some Nonlinear Partial Differential Equations in the Fluid Mechanics and Physics of the Earth,The National Natural Science Foundation of China (No. 11171158), 2012/01-2015/12，Finished，Participant
4.Lie Integral of Nonlinear biological dymamics,Yonth Science and Technology Innovation Project of Nanjing Agricultural University(No. KJ2010026)，2010/09-2012/12,Finished，Principal Investigator
5. Pattern Dynamics of Nonlinear Partial Differential Equations，Graduate Innovation Project of Jiangsu Province(No. CXLX12-039),2012/06-2013/6，Finished，Principal Investigator

TEACHING INFORMATION:

Calculus

Linear Algebra

Functions of Complex Variables

Teaching research projects:

1.Educational reform project of Nanjing Agricultual University(No.2017Y039),
Research on the teaching mode of mathematics course in colleges and universities under the background of Internet, Ongoing, Principal Investigator
2.Educational reform project of Nanjing Agricultual University(No.2013Y042),
Research on the Reform of Agricultual University Maths Teaching, Finished, Principal Investigator

Teaching Award:

First prize winner of the 2016 Young Teachers Teaching Competition of the school of science, Nanjing Agricultural Univesity

PUBLICATIONS:

(1) **Lei Shi***, Qingkun Xiao, Baoqing Liu, Existence and stability of front solutions of the amplitude equations for rotating magnetoconvection，Applied Mathematics A Journal of Chinese Universities，2017，32（2）：142-148.

(2) Youpeng Chen* , Xingyin Liu, **Lei Shi** ,Global fast and slow solutions of a single-species bacillus system with free boundary, Electronic Journal ofDifferential Equations, 2016,330(2016): 1~16

(3) Yibin Zhang*，**Lei Shi**，Multi-peak solutions for a planar Robin nonlinear elliptic problem with large   exponent, Electronic Journal of Differential Equations, 2016, 103 (2016): 1-21.

(4) **Lei Shi***, Liu Le, Stability and Bifurcation Analysis of an Amplitude Equation with Dirichlet Boundary Conditons, Mathematic Applicata, 2015, 28(4): 830-835

(5) **Lei Shi***, Ming Wei,   Xiong You，Analysis of an epidemic model with population dynamics and nonlinear incidence rate ，Journal of   Huazhong Normal University, 2014, 48(5): 632-636

(6) Yong Chen*, **Lei Shi** ,Well posedness for stochastic higher order modified Camassa-Holm equation. Nonlinear Analysis Series A: Theory, Methods & Applications, 2014, 102(2014): 242-250

(7) **Lei Shi**, Hongjun Gao*, Bifurcation Analysis of an Amplitude Equation, International Journal of Bifurcation and Chaos, 2013, 23(5), DOI:10.1142/S0218127413500818.

(8) **Lei Shi***, Bifurcation Analysis of a Coupled Kuramoto-Sivashinsky and Ginzburg-Laudau-Type Model, Journal of Applied Mathematics, 2013, Article ID 926512, 8 pages ,2013. DOI:10.1155/2013/926512.

(9) **Lei Shi***,Xiong You,   Bifurcation and Stability Analysis of Steady Solution for   a Reaction-Diffusion Equation, Mathematic Applicata , 2013, 26(3): 639-645.

(10) Chen Zhaoxia, **Shi Lei**,You Xiong*,Phase-fitted Symplectic PRK Methods For Osicllatory Hamiltonian Systems, Journal of Nanjing University, 2012,29(2): 139-154.

(11)**Lei Shi***，Jun Yu，Hongxing Yao， SI Epidemic Model with Constant input and Nonlinear Incidence rate, Applied Mathematics A Journal of Chinese Universities，23(1),7-12, 2008.